Amendment to the Abstract

Please replace the title with the following new title:

IMPROVED SPIN-VALVE MAGNETORESISTIVE THIN FILM ELEMENT

Please replace the abstract with the following new abstract:

A spin-valve magnetoresistive thin film element comprises an antiferromagnetic layer and a pinned magnetic film. The pinned magnetic film contacts the antiferromagnetic layer, wherein a magnetizing direction is pinned by an exchange coupling magnetic field between the pinned magnetic layer and the antiferromagnetic layer. The spin-valve magnetoresistive thin film element further comprises a free magnetic layer and a nonmagnetic electrically conductive layer. The nonmagnetic electrically conductive layer is formed between the free magnetic layer and the pinned magnetic layer, wherein a magnetizing direction of said free magnetic layer is aligned so as to intersect with said magnetizing direction of said pinned magnetic film. The pinned magnetic film includes a first pinned magnetic layer contacting the antiferromagnetic layer and a second pinned magnetic layer and a nonmagnetic intermediate layer therebetween, wherein the first pinned magnetic layer and the second pinned magnetic layer have different thicknesses. The antiferromagnetic layer comprises one of an X-Mn alloy, where X is selected from the group consisting of Pt, Pd, Ir, Rh, Ru, Os and combinations thereof, and a Pt-Mn-X' alloy, where X' is selected from the group consisting of Pd, Ir, Rh, Ru, Os, Au, Ag and combinations thereof. A thickness of the first pinned magnetic layer, a thickness

of the second pinned magnetic layer, and a ratio of the thickness of the first pinned magnetic layer to the thickness of the second pinned magnetic layer are adjusted such that the exchange coupling magnetic field has an intensity of at least about 1 kOe.